REMARKS

Claims 46-53, 56-65, and 68-79 are currently pending. Claims 46, 56, 58, 68, and 70 have been amended and new claims 71-79 have been added.

Applicants acknowledge and appreciate the Examiner's indication that claims 47 and 59 are allowed.

The Examiner rejected claims 46, 48, 50, 53, 56-58, 60, 62, 65, and 68-69 under 35 U.S.C. §102(b) as being anticipated by Cousimano (U.S. Patent No. 4,302,935). In addition, the Examiner rejected claims 51-52 and 63-64 under 35 U.S.C. §103(a) as being unpatentable in view of Cousimano.

Amended claim 46 recites a tube configured to attach to an engine housing and to guide a fluid from an inlet to an outlet. The tube includes a first component including an interior and a bend portion. The bend portion has a curved outer bend surface adjacent the interior and has a first inner bend surface adjacent the interior. The first inner bend surface includes a first portion and a second portion that meet to define an edge positioned opposite the outer bend surface and spaced away from the inlet and the outlet. A second component is positioned adjacent the edge and includes a curved surface that cooperates with the first portion and the curved outer bend surface to guide all of the fluid flow through the bend portion.

Before discussing the Examiner's rejections, Applicants would like to point out the support for some of the amendments made to the claims. Specifically, Applicants refer the Examiner to annotated Fig. 8, reproduced below which illustrates an edge "A" that is produced by the intersection of a cylindrical surface "B" and a planar surface "C".

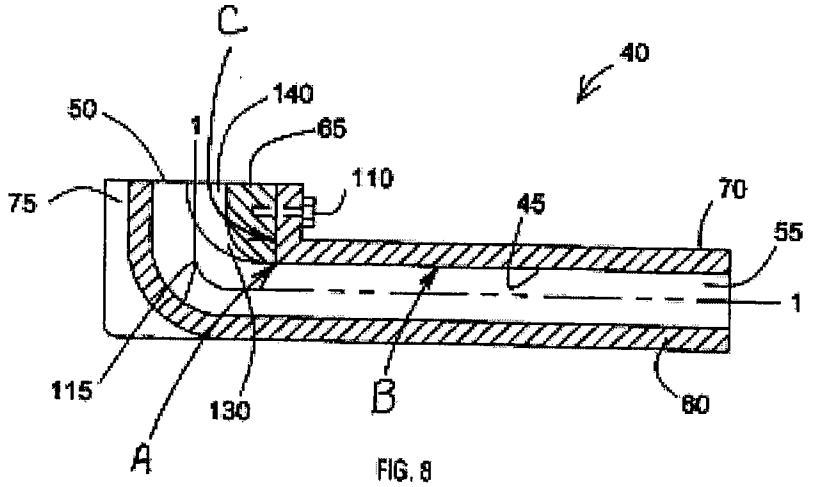


FIG. 8

The edge "A" and surfaces "B" and "C" can also be seen in Figs. 8 and 12. The cylindrical surface "B" and the planar surface "C" are analogous to the first portion and the second portion of the first inner bend surface.

Cousimano does not teach or suggest, among other things, a tube that includes a first inner bend surface that includes a first portion and a second portion that meet to define an edge positioned opposite the outer bend surface and spaced away from the inlet and the outlet.

Rather, Cousimano discloses a tube T and an insert A. The tube includes a continuous bend that terminates at a plate B. The continuous bend defines a curved outer bend surface and a first inner bend surface. However, the first inner bend surface does not include a first portion and a second portion that meet to define an edge. An edge, as illustrated in Fig. 8 is defined by the intersection of two surfaces at a curve where the two surfaces are not continuous. Thus, while a smooth continuous curving surface, such as is taught by Cousimano, can be arbitrarily divided into a first portion and a second portion, these portions do not meet to define an edge. The inner surface of Cousimano does meet a planar surface of the plate to define an edge. However, this edge is the inlet of the tube and as such is not spaced away from the inlet and the outlet.

Furthermore, Cousimano does not teach or suggest a second component positioned adjacent the edge and including a curved surface that cooperates with the first portion and the curved outer bend surface to guide all of the fluid flow through the bend portion. Because Cousimano does not teach or suggest an edge as recited in claim 46, Cousimano cannot teach or suggest a second component positioned adjacent the edge.

In light of the foregoing, Cousimano does not teach or suggest each and every limitation of claim 46. As such, claim 46 is novel in view of Cousimano and is not obvious in view of Cousimano. In addition, claims 48-53, 56-57, and 71-72 depend from claim 46 and are novel in view of Cousimano and are not obvious in view of Cousimano.

Amended claim 58 recites a tube configured to attach to an engine housing and to guide a fluid along a tube interior from an inlet to an outlet. The tube includes a bend portion that has a curved outer bend surface adjacent the interior and a curved inner bend surface adjacent the interior. The tube includes a first component that defines the outer bend surface, and an edge opposite the outer bend surface, spaced away from the inlet and the outlet, and adjacent the interior. A second component is positioned adjacent the edge and includes a curved surface that

at least partially defines the curved inner bend surface. The curved surface is arranged such that all of the fluid passes between the curved surface and the curved outer bend surface.

Cousimano does not teach or suggest, among other things, an edge opposite the outer bend surface, spaced away from the inlet and the outlet, and adjacent the interior. In addition, Cousimano does not teach or suggest a second component positioned adjacent the edge.

As discussed with regard to claim 46, Cousimano discloses a tube T that includes a continuous bend that terminates at a plate B. The plate B defines an inlet with an outlet positioned at the opposite end of the tube T. The continuous bend defines a curved outer bend surface. However, there is no edge spaced away from the inlet and the outlet. The fact that Cousimano discloses a continuous smooth bend precludes the teaching of an edge as the surface is continuous. Even an arbitrary division of the tube into two portions does not result in an edge. In fact, the only edge disclosed by Cousimano is defined by the intersection of the inner surface and the plate. However, this edge defines the inlet and as such is not spaced away from the inlet.

Furthermore, because Cousimano does not teach or suggest an edge as defined in claim 58, Cousimano cannot teach or suggest positioning a second component adjacent the edge.

In light of the foregoing, Cousimano does not teach or suggest each and every limitation of claim 58. As such, claim 58 is novel in view of Cousimano and is not obvious in view of Cousimano. In addition, claims 60-65, 68-69, and 73-75 depend from claim 58 and are novel in view of Cousimano and are not obvious in view of Cousimano.

The Examiner rejected claims 46, 48, 50, 53, 56-58, 60, 62, 65, 68-69, and 70 under 35 U.S.C. §102(b) as being anticipated by Reed (U.S. Patent No. 1,300,015). In addition, the Examiner rejected claims 51-52 and 63-64 under 35 U.S.C. §103(a) as being unpatentable in view of Reed.

With regard to claim 46, Reed does not teach or suggest, among other things, a first inner bend surface including a first portion and a second portion that meet to define an edge positioned opposite the outer bend surface and spaced away from the inlet and the outlet, and a second component positioned adjacent the edge and including a curved surface that cooperates with the first portion and the curved outer bend surface to guide all of the fluid flow through the bend portion.

Rather, Reed discloses a mixer that includes a manifold 1 that makes a 90-degree bend before connecting to a valve chamber 2. A mixing device positioned within the manifold

includes a ring 6 and a plurality of blades 7 (best illustrated in Fig.1) that induce a swirl in the fluid as it passes through the mixer. As illustrated in Fig. 1, the mixing device includes a plurality of blades and a plurality of surfaces that each affect a portion of the fluid as it passes through the flow device. Thus, there is no surface that cooperates with the curved outer bend surface to guide all of the fluid flow through the bend portion. Rather, the flow is divided into at least four distinct flow streams that are each guided by different surfaces.

The Examiner attempts to overcome this deficiency by identifying the ring portion 6 as the inner bend surface. However, this surface does not cooperate with any other surfaces to guide all of the fluid flow through the bend portion. Rather, the ring is positioned downstream of the bend portion and thus does not guide the fluid through the bend. Furthermore, the ring extends around the entire flow path and as such does not cooperate with any other surfaces to guide the fluid as the fluid passes through the ring portion.

In light of the foregoing, Reed does not teach or suggest each and every limitation of claim 46. As such, claim 46 is novel in view of Reed and is not obvious in view of Reed. In addition, claims 48-53, 56-57, and 71-72 depend from claim 46 and are novel in view of Reed and are not obvious in view of Reed.

With regard to claim 58, Reed does not teach or suggest, among other things, a first component that defines the outer bend surface and an edge opposite the outer bend surface, spaced away from the inlet and the outlet, and adjacent the interior, and a second component positioned adjacent the edge and including a curved surface that at least partially defines the curved inner bend surface, the curved surface arranged such that all of the fluid passes between the curved surface and the curved outer bend surface.

As discussed above, Reed discloses a mixing device that includes a plurality of blades supported by a ring member and positioned within a manifold to induce swirl in a flow of fluid. The blades are arranged to divide the flow into at least four separate flow streams as the flow passes through the blades. Thus, there is no curved surface positioned such that all of the fluid passes between the curved surface and the curved outer bend surface. Rather, a portion of the flow passes between any given blade surface and the outer bend surface. However, there is always a portion of fluid that passes between the blades and an inner surface and that does not flow between the blades and the outer bend surface.

The Examiner attempts to overcome this deficiency by identifying the ring portion 6 as the inner bend surface. However, this surface does not cooperate with any other surfaces to guide all of the fluid flow through the bend portion. Rather, the ring is positioned downstream of the bend portion and thus does not guide any of the fluid through the bend. Furthermore, the ring extends around the entire flow path and as such does not cooperate with any other surfaces to guide the fluid as the fluid passes through the ring portion.

In light of the foregoing, Reed does not teach or suggest each and every limitation of claim 58. As such, claim 58 is novel in view of Reed and is not obvious in view of Reed. In addition, claims 60-65, 68-69, and 73-75 depend from claim 58 and are novel in view of Reed and are not obvious in view of Reed.

Amended claim 70 recites a tube configured to attach to an engine housing and to guide a fluid from an inlet to an outlet. The tube includes a first component including an interior and a bend portion. The bend portion has a curved outer bend surface adjacent the interior and has a first inner bend surface adjacent the interior. The first inner bend surface includes a first portion and a second portion that cooperate to define a sharp corner opposite the outer bend surface and spaced away from the inlet and the outlet. A second component is positioned adjacent the sharp corner and includes a curved surface that has a second inner bend surface. The second inner bend surface and the outer bend surface cooperate to guide all of the fluid flow through the bend portion. The second component is disposed completely within the first component.

Reed does not teach or suggest a second component disposed completely within the first component. Rather, Reed discloses a mixing device that includes a plurality of blades supported by a ring member and positioned partially within a manifold to induce swirl in a flow of fluid. The Examiner identifies the ring member as being analogous to the second component. However, as is clear with reference to Fig. 3 of Reed, the ring portion 6 is not completely disposed within the manifold 1. Rather, half of the ring portion 6 sticks out of the manifold. In addition, the ring portion 6 could not be positioned completely within the manifold. The manifold engages an engine cylinder and defines a space that receives and holds the ring portion in a desired position. If the ring portion 6 was positioned completely within the manifold, the entire mixing device would be free to rotate in response to the flow and would not be as effective at inducing a swirl in the flow.

Furthermore, Reed does not teach or suggest, a tube that includes, among other things, a first inner bend surface that includes a first portion and a second portion that cooperate to define a sharp corner opposite the outer bend surface and spaced away from the inlet and the outlet, and a second component positioned adjacent the sharp corner.

Applicants continue to disagree with the Examiner's interpretation of the term "sharp corner." Applicants have argued and continue to argue that the term "sharp corner" is defined in the specification with regard to Fig. 1. *See Specification, page 2, lines 10-12.* However, the Examiner argues that "it is not clear that such a definition would apply to the actual instant invention." *Office Action dated 10/17/2007, page 5.* Applicants ask the Examiner to identify the language within the specification that leads to the conclusion that the Background Section of the present application does not apply to the present invention. Furthermore, the Examiner argues that "what the specification is teaching and the broadest interpretation for the definition of this term, it is considered the definition based upon the prior art figure is more specific and not the broadest interpretation of the definition suggested in combination with the invention of the instant application." *Office Action dated 10/17/2007, page 6.* Applicants respectfully request that the Examiner identify the alternative definition of "sharp corner" in the specification. This term is defined in the Background Section. The fact that a broader interpretation of the term "sharp corner" exists is exactly why Applicants defined it with reference to a prior art figure. The Examiner's decision to ignore the Applicants' definition of this term is contrary to common patent practice and is not supported by Applicants' disclosure.

In light of the foregoing, Reed does not teach or suggest each and every limitation of claim 70. As such, claim 70 is novel in view of Reed and is not obvious in view of Reed. In addition, claims 76-79 depend from claim 70 and are novel in view of Reed and are not obvious in view of Reed.

The Examiner rejected claims 46, 48, 49, 57-58, 60-61, and 69-70 under 35 U.S.C. §102(b) as being anticipated by Jansen (U.S. Patent No. 5,992,465). In addition, the Examiner rejected claims 51-52 and 63-64 under 35 U.S.C. §103(a) as being unpatentable in view of Jansen.

With regard to claim 46, Jansen does not teach or suggest, among other things, a first inner bend surface including a first portion and a second portion that meet to define an edge positioned opposite the outer bend surface and spaced away from the inlet and the outlet, and a

second component positioned adjacent the edge and including a curved surface that cooperates with the first portion and the curved outer bend surface to guide all of the fluid flow through the bend portion.

Rather, Jansen discloses a flow system that includes a conduit 10 and three flow inducing portions 12, 14, and 16. The flow inducing portions include a plurality of vanes that guide the fluid through the elements as desired. The conduit does not include a first portion and a second portion that meet to define an edge. Rather, the conduit includes a straight portion that meets an elbow in a manner that defines a continuous smooth intersection. Thus, there is no edge defined by these two surfaces.

Furthermore, there is no second component positioned adjacent an edge and including a curved surface that cooperates with the first portion and the curved outer bend surface to guide all of the fluid flow through the bend portion. Rather, the flow inducing portions include curved surfaces that are enclosed within an outer wall 34 that extends around the interior of the conduit. Thus, all of the flow is guided only by the flow inducing portions as it passes through the flow inducing portions. There is no curved surface within the flow inducing portion that cooperates with the outer bend surface to guide all of the fluid through a bend portion. Rather, the fluid is guided by several surfaces of the flow inducing portion or the fluid is guided by the outer bend surface.

In light of the foregoing, Jansen does not teach or suggest each and every limitation of claim 46. As such, claim 46 is novel in view of Jansen and is not anticipated by Jansen. In addition, claims 48-53, 56-57, and 71-72 depend from claim 46 and are novel in view of Jansen and are not obvious in view of Jansen.

With regard to claim 58, Jansen does not teach or suggest, among other things, a first component that defines the outer bend surface and an edge opposite the outer bend surface, spaced away from the inlet and the outlet, and adjacent the interior, and a second component positioned adjacent the edge and including a curved surface that at least partially defines the curved inner bend surface, the curved surface arranged such that all of the fluid passes between the curved surface and the curved outer bend surface.

Rather, Jansen discloses a flow system that includes a conduit 10 and three flow inducing portions 12, 14, and 16. The flow inducing portions include a plurality of vanes that guide the fluid through the elements as desired. The conduit does not include an edge opposite the outer

bend surface. Rather, the conduit includes a straight portion that meets an elbow in a manner that defines a continuous smooth intersection. Thus, there is no edge defined by these two surfaces.

Furthermore, Jansen does not teach or suggest a second component positioned adjacent the edge and including a curved surface that at least partially defines the curved inner bend surface, the curved surface arranged such that all of the fluid passes between the curved surface and the curved outer bend surface. Rather, Jansen discloses a plurality of flow inducing portions that extend completely around the interior of the conduit. Because there is no feature analogous to the recited edge, the flow inducing portion cannot be positioned adjacent the edge. Even if the flow inducing portion was positioned adjacent an edge, a contention Applicants disagree with, there is no curved surface defined by the flow inducing portion that can be positioned such that all of the flow passes between the curved surface and the curved outer bend surface. In fact, the flow inducing portions effectively divide the flow such that no surface guides all of the flow.

In light of the foregoing, Jansen does not teach or suggest each and every limitation of claim 58. As such, claim 58 is novel in view of Jansen and is not obvious in view of Jansen. In addition, claims 60-65, 68-69, and 73-75 depend from claim 58 and are novel in view of Jansen and are not obvious in view of Jansen.

With regard to claim 70, Jansen does not teach or suggest a tube that includes, among other things, a first inner bend surface that includes a first portion and a second portion that cooperate to define a sharp corner opposite the outer bend surface and spaced away from the inlet and the outlet, and a second component positioned adjacent the sharp corner.

As discussed, Applicants continue to argue that the Examiner's interpretation of the term "sharp corner" is improper and is not supported by the present specification. Jansen discloses a conduit having a smooth inner surface and does not include a sharp corner. In the present application, Applicants state "Fig. 1 illustrates one prior art tube 1 in section. As can be seen, the inner corner of the tube 2 is not radiused. This sharp corner creates turbulence and other flow losses that are undesirable." *Specification, page 2, lines 10-12 (emphasis added).* Applicants can find no feature in the conduit of Jansen that would create turbulence and other flow losses and that could be analogous to a sharp corner. Rather, Jansen discloses a smooth 90 degree transition that results in minimal flow losses.

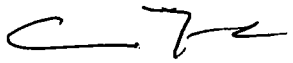
In light of the foregoing, Jansen does not teach or suggest each and every limitation of claim 70. As such, claim 70 is novel in view of Jansen and is not obvious in view of Jansen. In addition, claims 76-79 depend from claim 70 and are novel in view of Jansen and are not obvious in view of Jansen.

CONCLUSION

In light of the foregoing, Applicants respectfully submit that claims 46-53, 56-65, and 68-79 are allowable.

The undersigned is available for telephone consultation during normal business hours.

Respectfully submitted,



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